

North Carolina Public Health Response to Cleanup of Clandestine Methamphetamine Laboratories

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Law Enforcement

Seize lab

Post lab

Remove bulk
chemicals

Notify Local
Health
Department
(LHD)



WARNING WARNING WARNING

A clandestine laboratory for the manufacture of illegal drugs and/or hazardous chemicals was seized at this location on 12/7/04. Known hazardous chemicals have been disposed of pursuant to law.

However, there still may be hazardous substances or waste products on this property, either in buildings or in the ground itself. Please exercise caution while in these premises.

NC State Bureau of Investigation

Phone: 919-571-4850

WARNING WARNING WARNING

Exposure Risk

Active labs

Greatest risk of adverse health effects

Former labs

Less risk

Risk dependent on:

- frequency of manufacture
- method of manufacture
- “Cook” habits

Contamination sources:

Corrosives – toxics – flammables
– combustibles – reactives

Incompatible

- chemicals
- storage location
- containers



Improvised/incompatible lab equip.



Improper handling



Meth is used as an indicator for presence of other hazardous chemicals.

Long term health effects from residual meth have not been studied in-depth.

Limitations on setting a remediation standard.

Analytical vs. Health Based Standards

Detection limits

Feasibility

Conservative to
be health
protective

Research in
progress

Calculated
risk-based
target

Minnesota Pollution Control Agency

Meth penetration of wallboard

Vertical and horizontal distribution
on wall surfaces

Meth deposition on ceiling
surfaces

National Jewish Medical and Research Center

Contamination from various cook
methods

Decontamination of building
materials

Encapsulation of contaminated
building materials

Stability and recovery of meth on
painted drywall

Meth exposures at a non-active lab

Wipe samples positive for meth on hands, clothing, etc.

| | |
|-----------------|-------------------------------|
| Suspects | 0.9 – 17.4 $\mu\text{g/wipe}$ |
| Children | 0.2 – 1.18 $\mu\text{g/wipe}$ |
| Law Enforcement | 0.5 – 0.93 $\mu\text{g/wipe}$ |
| Pet dog | 1.89 $\mu\text{g/wipe}$ (fur) |

Chemical exposures at “controlled” cooks

Surface contamination

Airborne exposures during cook

Distribution of contamination

24 hours after cook –
various activity levels

24 hours after “controlled” cook

Airborne Methamphetamine
(during the Cook: 520 – 760 $\mu\text{g}/\text{m}^3$)

No activity: 70 – 117 $\mu\text{g}/\text{m}^3$
13 hrs after cook

Medium activity: 107 – 170 $\mu\text{g}/\text{m}^3$
16 hrs after cook

Heavy activity: 100 – 210 $\mu\text{g}/\text{m}^3$
18 hrs after cook

Decon of methamphetamine contaminated clothing

Test effectiveness by washing

Normal washing machine

Warm water w/ Cold Water Tide®

Denim cloth 1x = 99.4%

Cotton blanket 1x = 99.8%

Methamphetamine Exposures

(hotel cook)

Teddy Bear: 12" away



Sweater:

3,100 $\mu\text{g}/100 \text{ cm}^2$

Underlying "fur":

2,100 $\mu\text{g}/100 \text{ cm}^2$

pH: <1

Contamination from smoking meth

(motel room)

Airborne levels: 300-1,600 $\mu\text{g}/\text{m}^3$
(lab may exceed 5,000 $\mu\text{g}/\text{m}^3$)

Surface areas: up to 35 $\mu\text{g}/\text{cm}^2$
(lab up to 860 $\mu\text{g}/\text{cm}^2$)

Levels may be less if meth was inhaled

CA Environmental Protection Agency

Developed a reference dose (RfD) for methamphetamine” 2/09

RfD = concentration or dose at or below which adverse health effects are not likely to occur

Reflects toxicity and data uncertainty

No effects level / uncertainty factor
= RfD

CA Environmental Protection Agency

“Assessment of Children’s Exposure To Surface Methamphetamine Residues in Former Clandestine Methamphetamine Labs, And Identification of A Risk-Based Cleanup Standard For Surface Methamphetamine Contamination”

2/09

Methamphetamine Wipe Sample Clearance levels

Current meth cleanup levels in
various states:

$\leq 0.1 \mu\text{g}/100\text{cm}^2$ to $0.5 \mu\text{g}/100\text{cm}^2$

NC does not have a cleanup level

Calculated risk-based target

$1.5 \mu\text{g}/100\text{cm}^2$

Legislative Requirement

130A-284. For the protection of the public health, the Commission shall adopt rules establishing decontamination standards to ensure that certain property is reasonably safe for habitation.

Legislative Requirement cont.

An owner, lessee, operator or other person in control of a residence or place of business or any structure appurtenant to a residence or place of business, and who has knowledge that the property has been used for the manufacture of methamphetamine, shall comply with these rules.

N.C. Administrative Rules Methamphetamine Decontamination

10A NCAC 41D.0101-.0105

effective April 1, 2005

[http://epi.publichealth.nc.gov/oii/pdf/SubchapterDRules72005.
pdf](http://epi.publichealth.nc.gov/oii/pdf/SubchapterDRules72005.pdf)

Scope of Rules

Protect public health inside of re-occupied residences & places of business

No specific requirements for outdoor issues

Does not address other legal issues

- Personal effects left behind by tenant

Overview Rules

- ◆ LHD notifies property owner
- ◆ Prior to habitation, responsible party shall:
 - perform a pre-decontamination assessment
 - decontaminate the property
 - document those activities
 - submit documentation to LHD








Decontamination

- ◆ Follow pre-decontamination plan
- ◆ Ventilate before and after remediation (fans)
- ◆ Machine washable porous items-wash 2x
- ◆ **Dispose** of non-machine washable porous items



◆ **Dispose** of carpeting in “cook” area and areas served by same HVAC system.



Decontamination

- ◆ HVAC system:

Replace filters, clean diffusers, grills & nearby surfaces

Clean non-porous ducts, **replace** internally insulated ductwork

- ◆ Remove effected plumbing/clean

- ◆ Clean appliances not used in manufacture

Discard appliances used in manufacture and storage





- ◆ After cleaning, **completely remove** and replace surfaces with visible contamination and/or staining







11:320 PM

Decontamination

- ◆ Clean ceilings, walls, floors and other non-porous materials :
 - scrub with household detergent
 - rinse with clear water
 - repeat twice
- ◆ Coat ceilings and walls with non-water based paint after cleaning

Post-Decontamination

The responsible party shall:

- ◆ Notify LHD upon completion of decontamination process
- ◆ Provide a copy of the pre-decontamination assessment and documentation of decontamination activity to the LHD
- ◆ Retain documentation for 3 years

Post-Decontamination

The LHD shall:

- ◆ Review the documentation
- ◆ Notify the responsible party in writing if documentation is incomplete
- ◆ Retain documentation for 3 years

Enforcement

LHD may inspect prior to, during or after decontamination to enforce these rules.

Article 2 of 130A

Occupy without required clean up

= Violation of GS 130A-25

= Criminal Misdemeanor

NC Guidelines include:

- Hazardous Chemicals in Illicit Methamphetamine Laboratories
- Suggested contractor qualifications
- Pre-decontamination Template
- Decontamination Template
- References

Drug Enforcement Administration Environmental Protection Agency

Guidelines for Law Enforcement for the Cleanup of Clandestine Drug Laboratories - 2005 Edition

<http://www.justice.gov/dea/resources/redbook.html>

The Methamphetamine Remediation Research Act of 2007

Required EPA to develop guidelines
for remediating methamphetamine
labs

published Oct 2009

EPA

Voluntary Guidelines for Methamphetamine Laboratory Cleanup

<http://www.epa.gov/oem/methlab.htm>

NC Division of Public Health Occupational and Environmental Epidemiology

[http://epi.publichealth.nc.gov/oii/meth/
index.html](http://epi.publichealth.nc.gov/oii/meth/index.html)

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